
P H I L O S O P H Y

OF

P H Y S I C.

(PRICE ONE SHILLING AND SIX-PENCE.)

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P H Y S I C

(ONE BUILDING AND SIXTH FLOOR)

A N
ENLARGED SYLLABUS
O F
PHILOSOPHICAL LECTURES

DELIVERED

By *HUGH SMITH*, M. D.

Of HATTON-STREET.

With the PRINCIPLES on which his CONJECTURES are founded concerning ANIMAL LIFE, and the LAWS of the ANIMAL OECONOMY.

These Principles are applied not only to the general Doctrine of the Glands, but likewise to some new Thoughts on the Nervous System, the Gout, and Paralytic Complaints.

L O N D O N:

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PHILOSOPHY
OF SCIENCE

BY
ALAN WATSON

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PHILOSOPHY
OF SCIENCE

BY
ALAN WATSON

INTRODUCTORY PREFACE.

*To those Gentlemen in particular who honoured
DR. SMITH by their obliging Condescension
in attending his Lectures on the Philosophy of
Phyfic—and to the Public in general.*

I SHOULD be much wanting in respect, much more so in gratitude, did I not in this address acknowledge the pleasing remembrance of that very candid reception, with which my noble and truly liberal auditors have been pleased to honour some very imperfect endeavours to establish the first elements of Phyfic.

CONSCIOUS of the many inaccuracies to be discovered throughout the Course of my Lectures, I have not presumed to stile them more than rude preparatory outlines; concluding there was little more to be expected than *perhaps* an approbation of the design; and for this I trusted to the known indulgence of liberal minds. In these expectations

I have been agreeably deceived : — I have been most kindly supported by the favour and countenance of men distinguished for abilities and learning : which emboldens me to hope the present enlargement of my Syllabus may likewise escape the censure of the Public.—In my Introductory Lecture I mentioned that the design had been many years in contemplation ; but, fearful of my own want of importance, awed by the formidable appearance of the task, and the almost insurmountable difficulties attending the promulging a new doctrine, with such a degree of success as might intitle it to a fair and candid disquisition,—I could not before summon the fortitude necessary to appeal to the Public.

WHEN the Lectures were compiled, many doubts remained concerning the propriety of delivering the Conjectures on Animal Life ; and had it not been for the persuasion of some friends, whose judgments I have ever respected, the Conjectures had been suppressed : they observed, and with propriety, my Lectures would be imperfect, unless the Principles were communicated on which my own maxims were founded.

To their determination I submitted, not without reluctance, being fearful of the event ; lest I should either have been deceived in my reasonings, or might not be able to express myself, so as to be clearly understood.

It is even now my most earnest desire, the Principles on which the Conjectures are founded should be coolly and deliberately enquired into. Many of the opinions are undoubtedly

edly new and singular : Truth being the great object of my pursuit, I should have reason to lament the partiality of my friends, if I suffered myself to be prevailed on to propagate errors, however plausible they might appear : For these reasons I have withstood many respectable applications to deliver another Course of Lectures ; and am determined not to repeat them, till the Public have had a fair opportunity of examining the truth of the Principles, on which those Conjectures are founded, that support the practical observations delivered in the Lectures.

It is well known, that all learned and wise men ever regard new systems with a jealous eye ; and their so doing is to be accounted a mark of wisdom. I wish my principles to be received with a manly distrust ; suffer them, however, to undergo a full and candid examination. I am sensible it will require some degree of attention for gentlemen to comprehend the whole of them ; especially those who have not seen the experiments, and who are unacquainted with the reasonings by which the principles have been supported.

THESE difficulties may perhaps occasion doubts in the minds of some medical, and other learned men ; so far it must be acknowledged they will operate against me. I am content it should be so. Possibly those doubts may excite some more able persons to search after the truth ; and, as I am not wedded to my own opinions, I shall most readily join in their condemnation, whenever they are proved to be erroneous.

THE enlargement of my Syllabus will, I apprehend, prove acceptable to many of those Gentlemen who honoured my Lectures by their presence ; some of them indeed have applied to me on this subject. The Public at large, perhaps, may be pleased with having an opportunity of knowing the principles ; and generous minds ever shew favour to an attempt, however poorly executed, that has for its objects the information and happiness of mankind.

I SHALL beg leave to repeat what was delivered in one of my Lectures—

“ I LOVE the profession of physic. I honour able medical
 “ practitioners. I wish to convince mankind of the benefits
 “ that may be derived from a practice of physic founded on
 “ liberal and rational principles. I have used my best en-
 “ deavours to convey clear and adequate ideas concerning
 “ animal life, and the laws of the animal œconomy ; with
 “ a full hope and firm persuasion, that thereby the practice
 “ of physic may be rendered more universally beneficial ;
 “ and with a sincere desire that farther dignity may be
 “ added to the profession.”

WHETHER my maxims be true or false, permit me to add, if I cannot, by a generous and candid behaviour on my own part, suppress the envy and jealousy of illiberal minds,—I can pity and forgive such men.

It is my earnest desire to promote medical knowledge ; to render the philosophy of physic, an easy, pleasing, and
 rational

rational study; and to point out to gentlemen of fortune the propriety of their becoming acquainted with the first elements of a science—founded in the knowledge of the Laws of Nature, respecting animal life.

I most sincerely wish my fellow labourers, in the healing art, may with unanimity join me in this undertaking—let us endeavour to convince mankind it is their interest, on all occasions, to apply to able medical practitioners—more especially in that class of complaints termed *Chronic*, which is at present the great field of quackery.

Hatton-street, May 16, 1778.

HUGH SMITH.

TO THE
READER.

THE following is the Syllabus first published, in which no mention is made of the Conjectures to be delivered after the Lectures, concerning the first material cause of animal life, and the laws of the animal œconomy.

IF it be asked, why this part of the design was not taken notice of?—I refer my reader to the doubts already expressed in the Introductory Preface.—I was likewise fearful this attempt might be treated as altogether chimerical—and did

did not care to run the risk of premature ridicule; well knowing that, *sometimes*, where solid objections are not advanced, private whispers, and ironical buffoonery, may create insuperable prejudices against a man who dares to venture out of the beaten paths of Science.

PHILOSOPHICAL

PHILOSOPHICAL LECTURES
ON THE
PRACTICE OF PHYSIC:

By *HUGH SMITH*, M. D.

Of HATTON-STREET, LONDON.

THESE Lectures are intended to render the Practice of Physic a liberal science; as derived from the known and established laws of Natural Philosophy—to open a new theory, adapted to practice, and correspondent to those laws.

No person, it is believed, on this plan, has ever yet attempted to bring the rudiments of the science of Medicine, into one general and compendious point of view.

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IN the execution of the plan, *possibly* some practical rules may arise, supported on established principles, tending to the improvement of the science *. By a chain of rational and philosophical reasoning it is designed to call forth that knowledge obtained by detached studies ; and to apply it to the great end and purpose for which those studies were instituted.

MEN are often possessed of powers and talents, to which they themselves, in some degree, are strangers—and great abilities are often buried in oblivion, for want of right rules in practice. The truth of this observation many medical men have the mortification to experience ; and on this account *only* perhaps they pass their lives in obscurity ; and their knowledge is lost to the world. *The present Lectures, therefore, are particularly recommended to medical students.*

To men of letters human nature is acknowledged to be an agreeable object of contemplation. Can it be less entertaining to any man of good natural understanding ? The knowledge of NATURE is not *surely* above the reach of common sense — Considered liberally, and freed from all unnecessary terms of art, it will be found a pleasing science. These Lectures, probably, may throw a new light on the subject ; by opening to familiar view the first springs of life ; † the causes of

* This alludes to matters of fact evident to the senses set forth in the Fourth Lecture—ON NUTRITION.

† The reader may now perceive this passage alludes to the Conjectures on Animal Life.

man's gradual rise ; necessary decay ; and the causes likewise of the diseases to which he is liable. Is not every human being interested in this inquiry ? How many men have been rendered miserable by dipping into medical authors, for want of a consistent view of the leading principles of the science ? In these Lectures, though on medical subjects, every thing mysterious being removed, *man* properly becomes the object of rational, or philosophical contemplation.—It is to be hoped, likewise, the practice of physic may be rendered more universally beneficial, and *possibly* fresh dignity may be added to the profession.

S Y L L A B U S.

FIRST LECTURE—Introductory.—The Importance of the Design—not confined to men of the profession—but of utility to all gentlemen of liberal education—the propriety of their becoming acquainted with the elements of the science of Medicine enforced.

SECOND LECTURE—Historical,—but *principally* in regard to the Practice of Physic.—It is not only usual, but useful and entertaining, to trace the origin of whatever engages our inquiry.

THIRD LECTURE—On Animal Life.—It is impossible to establish the Practice of Physic, on liberal and rational principles,

ciples, without clear and fixed ideas concerning Animal Life—the great design of the art being to assist Nature, in order to preserve the lives of Animals.

FOURTH LECTURE—On Nutrition.—The design of this Lecture is to inquire into the mode of Nutrition, as it is performed in animal bodies—to point out certain facts, as *data*, to prove that Nutrition is universally carried on, in animal bodies, by the glandular system.*

FIFTH LECTURE—The subject of Nutrition continued.—This doctrine, though perhaps allowed, in *part*, by many able practitioners, has never yet been proved in the *whole*—its novelty *therefore* might induce some to dispute the truth of it, if the matter of fact rested *only* on a single person's practical discoveries; or on a few simple facts, *however evident* to the senses.—We shall therefore confirm this doctrine by physiological researches, and mathematical reasonings founded on the established *data* contained in the Fourth Lecture. †

SIXTH LECTURE—A continuation of the same subject.—No proof ought to be withheld, that can rationally be advanced, in support of principles in themselves important, but not generally established.—We shall therefore, by mechanical

* For an explanation of the word Gland, see page 19.

† I do not wish to be understood, nor do I mean, strict mathematical demonstration, for that can admit of no doubt; but a close method of reasoning, in imitation of that used by mathematicians; which, in subjects not strictly mathematical, never amounts to more than the highest degree of probability.

reasoning, farther confirm this doctrine of Nutrition being universally carried on by the glandular system.

SEVENTH LECTURE—On Diseases.—Here we mean to prove, agreeable to the principles before-mentioned, from practical experience, that the primary errors in animal bodies, which may justly be styled the *internal, incipient*, causes of diseases, are, *universally*, seated in the glandular system.—This, if well supported, must necessarily establish our doctrine concerning Nutrition beyond the possibility of doubt.—It must likewise be productive of new theories in many cases; and alter the present mode of practice, with regard to the curative intentions, in various diseases.

EIGHTH LECTURE—How a Physician differs from a Quack.—Having in the former Lecture established fixed principles, as a solid foundation for a liberal and rational practice of Physic, the present philosophic inquiry seems properly to take place.

NINTH LECTURE—Will set forth the superiority of a rational Practice of Physic over empiricism and quackery.

TENTH LECTURE—Acute and Chronic Diseases distinguished.—In this Lecture we shall take the liberty of drawing the line of distinction, in some measure different from that already given by medical writers; but *perhaps* necessary to establish the Practice of Physic, on liberal and rational principles—which regularly leads to—

ELEVENTH LECTURE—An inquiry into the causes of Quackery.

TWELFTH AND LAST LECTURE—Contains some rules, that we humbly conceive will be found useful; especially, to younger practitioners, in their conduct towards patients, both in acute and chronic diseases; in order to obtain their rational confidence, and to convince them of the benefits that may be derived from a Practice of Physic, founded on liberal and rational principles.

DESCRIPTION

D E S C R I P T I O N

O F A

G L A N D.

THAT no confusion may arise in our ideas, and with a view to be clearly understood by every one into whose hands this Syllabus may fall, it will not be improper to subjoin an explanation of the word GLAND, as it is applied in the Lectures.

ALL medical writers agree in this point, that a GLAND *serves to separate a particular humour from the blood.* GLANDS are distinguished, by anatomists, into simple and compound; accurate descriptions have been given of many that are visible, and new GLANDS are continually discovered. It concerns not our present purpose to inquire into their structures: Different GLANDS are evidently appointed for different uses—Whether, therefore, they be simple or compound; or whether they be any thing more than the ultimate terminations of single arteries, convoluted, or not; every

every part of the animal œconomy must be allowed to be a GLAND, whose office it is to *separate, percolate, or drain* a particular humour from the blood; which humour, when thus separated, is no longer blood.

In strict conformity to Physiology, this Description establishes a clear and adequate idea to be conveyed by the word GLAND.

SOME

S O M E A C C O U N T
 O F T H E
 C O N J E C T U R E S
 O N
 A N I M A L L I F E, &c.

THROUGHOUT the course of our Lectures, we endeavoured from effects to lead to causes—and thereby to account for Nutrition—and the primary causes of Diseases.

OUR Conjectures concerning the first active material cause of Animal Life, and the laws of the Animal Oeconomy, for obvious reasons, were totally detached from the Lectures—on these points, we endeavoured to trace effects from causes; and, by arguments founded on experimental proofs, we hope at least to have strengthened some of the opinions delivered in our Lectures; though perhaps we have not been able fully to establish any point contended for.

It is necessary, however, to be remarked, that nothing new is meant to be advanced concerning the properties of air, nor is it intended to enter into its properties at large—the application of its properties to Animal Life, is all we aim at : Some Conjectures are offered, that seem to shew the probability of air, put into motion by heat, being not only the first active material cause of new life, but the actual support of life, throughout every different stage of our animated existence.

THESE Conjectures, if admitted, shew the Mosaic account of the creation of man to be philosophically true—“ *that*
“ *the Lord God formed man of the dust of the ground, and*
“ *breathed into his nostrils the breath of life, and man became*
“ *a living soul,*” (Gen. ch. ii. v. 7.)—and that the laws of generation are the means appointed by our Creator to preserve this active operative cause of life, so given : For the Conjectures seem to evince what we term VITAL AIR, to be the first cause of motion, not only in man, but throughout the whole animated creation.

OUR leading aphorism runs thus—

IN ALL ANIMALS, LIFE, HEAT, AND MOTION, ARE
INSEPARABLE.

WE maintained the truth of this aphorism, not only by death and its consequences, but likewise by life and its effects : It seems also to be farther illustrated by the following Principles—from which many other important conclusions have been drawn.

PRINCIPLES

P R I N C I P L E S
 ON WHICH THE
 C O N J E C T U R E S
 A R E F O U N D E D.

Each Night, before the Lecture, a variety of Experiments were exhibited, to demonstrate the Truth of the following Principles: many of which will not be denied by scientific Men; and where it seems necessary, the others are attempted to be explained.

I.

A I R is matter.

II.

MATTER is of itself inactive, but capable of being put into motion.

AIR,

III.

AIR, as matter, is capable of different arrangements, modifications, and combinations, in obedience to the general laws of matter.

IV.

AIR is a fluid—but has properties peculiar to itself, and different from other fluids;—for,

V.

AIR is an elastic fluid, and the force of its spring is proportionable to its weight.

VI.

AIR possesses the property of rarefaction, or expansion.

VII.

HEAT—by which we mean a similar effect to that produced by fire, will rarefy or expand air.

AIR

VIII.

AIR possesses the property of compression, or condensation.

IX.

EXTERNAL pressure will condense, or compress air.

X.

COLD will condense, or compress air.

XI.

AIR *then* is rarefied by heat, and compressed by cold.

XII.

AIR exists in all bodies, fluid and solid.

This, perhaps, will not be doubted by such as are acquainted with experiments on air—for the satisfaction of others, the truth of the Principle was proved by experiments on gold, silver, copper, brass, lead, marble, various other stones, wood, &c. Air visibly issued from them all; more from some, than from others, in proportion to their porosity—the porosity of

G

wood,

wood, stone and metals, by help of a microscope, may be curiously displayed to the eye.

XIII.

WHEN bodies are deprived of internal heat and motion, the air contained within them may be said to be at a state of rest; it being then only subject to the variations of the atmosphere.

This may be proved by the Thermometer. The following curious experiment farther illustrates the matter of fact, and may lead to other discoveries: Let the bulb of a Thermometer be put into two ounces of cold water; the air, apparently at rest in the quicksilver, by the effect of cold being more compressed, the mercury will quickly descend several degrees; when the quicksilver is again apparently at rest, let thirty drops of oil of vitriol be put into the water; this produces heat, and the air contained in the quicksilver will as quickly be expanded; by the effect of this internal heat communicated to the fluid, the quicksilver will rise two or three degrees: Let a little chalk be now added to the fluid, the internal heat will be farther increased, and the quicksilver will ascend two or three degrees more.—Does not this experiment likewise shew that heat accompanies internal motion in fluids? — This observation, perhaps, may not prove unworthy the attention of such Gentlemen as entertain themselves with experiments on what is termed fixed air.

XIV.

ON the application of heat to a fluid, the first evident sign of internal motion is an air-bubble.

This is experimentally shewn, by putting any transparent liquor into a spoon, and placing it over a candle, or a lamp; in different fluids, different appearances may be observed, not unworthy the attention of the curious.

XV.

IN this state of the fluid the air contained in it is more rarefied, and expanded, than in the cold state of the fluid.

XVI.

THE air contained in most fluids becomes so far rarefied as to be put into motion by a degree of heat below that of the blood; we may then fairly conclude, from the degree of heat accompanying animal life, that the air contained in the fluids of an animal body is continually in motion.

This was confirmed by a variety of experiments (oleaginous fluids excepted) by placing the fluids over a lamp, and regulating the heat by a Thermometer.

XVII.

THE tunic, or coat of every distinct air-bubble, is evidently formed of the surrounding fluid.

XVIII.

EACH distinct bubble of air has a distinct and separate motion.

XIX.

IN different fluids, different degrees of heat are required to render these air-bubbles visibly active.

XX.

IN the more thin and transparent fluids, air-bubbles are sooner visible; and the air becomes fugitive below the degree of blood heat.

Water acidulated with spirit of vitriol, or distilled vinegar, becomes more transparent, and will prove the truth of this Principle; it may likewise be shewn by many of the white wines, and other fluids.

XXI.

THESE bubbles of air, being specifically lighter than the surrounding fluid, naturally tend to the surface; and there, soon bursting, this rarefied air escapes, and mixes with the common atmosphere, unless it be prevented by proper recipients.

Since the pressure of the atmosphere is the same on all fluids, how happens it that in some the air-bubbles are longer detained than in others?

XXII.

DIFFERENT fluids possess different degrees of tenacity or cohesion: this tenacity is weaker in thin transparent fluids.—Air-bubbles, therefore, become sooner fugitive in such fluids.

XXIII.

GLUE, gum, or Sugar, suspended in fluids, render them more tenacious, or cohesive.—AIR-BUBBLES THEREFORE ARE LONGER RESTRAINED FROM BECOMING FUGITIVE IN SUCH FLUIDS.

If our conjectures prove right, this observation may afford a clew to examine into the laws of life in the vegetable kingdom.—This idea is thrown out for the consideration of ingenious men; the subject itself, at present, not being within our sphere.

XXIV.

EXTERNAL heat being removed from a fluid, although the pressure of the cold atmosphere be freely admitted; it is, nevertheless, a considerable time before the air, rarefied by heat, returns to a state of rest.

The truth of this principle may be illustrated by a spoon, in the manner before mentioned; (Principle XIV.) and it is worthy attention.

XXV.

EARTHY particles may be suspended in a transparent fluid.

The process for making magnesia alba proves this—it is no contemptible experiment, though in familiar practice.

Two transparent liquors being mixed, they instantly lose both their transparency and fluidity, and become one intire white inspissated substance—this being repeatedly washed with water, the white earth, when dried, is the common magnesia alba of the shops.

It is well known this white earth was originally suspended in an aqueous menstruum, by means of the vitriolic acid; and in this process, it is precipitated by the fixed alkaline.

EARTHY.

XXVI.

EARTHY particles may float in air.

If any one doubts the truth of this, let him admit a ray of light into a darkened room, and he will be convinced of the matter of fact.

XXVII.

AIR does exist in the circulating fluids of an animal.

This was proved by the blood-vessel of a bullock, being secured by ligatures, before it was separated from the body of the living animal—it was farther confirmed by live crayfish, tench, &c.

XXVIII.

AIR does exist in the medullary substance of the brain.

This is one of the most beautiful experiments that can be exhibited by the air-pump—if it be well shewn, the resistance of the medullary and cortical substance of the brain is so great, as to produce a kind of perpetual motion.

XXIX.

AIR-BUBBLES, though specifically lighter than the surrounding fluid, cannot escape till the resistance arising from the cohesion of the parts of the surrounding fluid itself be overcome.

THIS

XXX.

THIS resistance, arising from the cohesion of the parts of the fluid, is proportioned to the different degrees of tenacity proper to different fluids; as before shewn.

XXXI.

THIS cohesive property in fluids, *then*, is the bond that restrains the air from becoming fugitive; or, in other words, *it is the bond of union.*

XXXII.

ANIMAL jelly, or gluten, exposed to the common atmosphere, and surrounding a globule of air, is sufficiently cohesive to prevent this moving air escaping in a degree of heat somewhat superior to that of blood heat.

XXXIII.

IT being highly necessary to fix some standard to regulate our inquiries—Air rarefied, in motion, detained in animal bodies by glandular secretions, or circulating with the fluids in the vascular system, permit us to call VITAL AIR.

XXXIV.

VITAL Air, Heat, and Motion, then, appear to be inseparable, in animal life.

ON

ON these principles our arguments are founded, concerning the first active material cause of animal life; and from these principles our conjectures are drawn, concerning the laws of generation, and those of the animal œconomy. For the satisfaction of the learned, and curious, it will not be improper to add a few words concerning VITAL AIR, which we presume to be the first *material* cause of motion in animal life.

THIS conjecture we have endeavoured to support by arguments drawn from experiments; all tending to shew the rational probability of air existing in an active and circulating state in animal bodies.

IT will be remembered, we proved air did actually exist in the blood of a living animal; and likewise in the medullary substance of the brain. We also proved, that in the degree of heat proper to animal life, this air must be in a rarefied and active state; and we farther endeavoured to shew, by arguments drawn from an incubated egg, and other points, the rational probability, that the propelling force of air, thus rarefied, and confined in a vascular system, was the first material cause of the circulation of the blood, and other fluids, in an animal body.

THE reaction of the vascular system we presume to be the secondary cause, in conjunction with the former, producing what is termed *involuntary muscular motion*—this motion, in the beginning of new life, is first discoverable at the *punctum saliens*, or leaping point; which afterwards becomes the heart of the foetus. The heart we have presumed to stile
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the *centre of motion* ; by which the circulation of the blood is regulated and maintained. The blood we consider to be a passive fluid, the common menstruum from whence nutrition is derived, by means of the glands.—We presume that some one order or more of the glands must be injured, debilitated, or totally obstructed, before the blood of an animal becomes impure.

By the propelling force of VITAL AIR we presume all glandular secretions to be performed, and the lymphatic circulations to be supported by the same power—and by means of the glands we presume the laws of generation to be maintained.

IN the beginning of new life, the motion of Vital Air seems to be supported by the natural heat of the parent, or by some adequate external means—this appears to be a general law, throughout nature, till *involuntary muscular motion* becomes sufficiently powerful to communicate that degree of internal heat, peculiarly proper to Vital Air: When this period arrives, the act of incubation ceases, with all oviparous animals; the foetus opening to itself a passage in order to breathe the common atmosphere; and, in viviparous animals, the natural birth takes place, by the united efforts of the parent and foetus.

It may perhaps be expected that something should be said concerning the brain and nervous system.—In this summary way I cannot hope to persuade scientific men to think with me—however, by mentioning the points contended for,
possibly

possibly objections will be started, that eventually may lead to the discovery of truth.

WE took notice in some of our conjectures, that man having a material body, it was but reasonable to conclude it should answer the various purposes for which it was so curiously formed; and that every distinct member should have its destined office. We endeavoured to prove that, in the business of motion and sensation, the nerves, proceeding from the brain and spinal marrow, though the chief, were not the only instruments; and from numerous experimental proofs, we concluded that the reaction of the vascular system, voluntary motion, and the exercise of the external senses, could not be supported without the aid of the nervous system.

It will be recollected we used many arguments to shew the *proper sense of feeling* seemed to arise from the due resistance of the medullary substance of the brain, or nervous matter, opposed to the propelling force of Vital Air.

WE took occasion to observe, that all the other senses were obedient to the *proper sense of feeling*; and endeavoured to shew that hearing, seeing, smelling, and tasting, were nothing more than the effects arising from feeling, which we considered as their primary cause.

As we have, under certain limitations, acknowledged the nervous system to be the seat of feeling, we inquired into the effects produced by any considerable variation in the
Vital

Vital Air, peculiarly existing in the nervous matter—and having before shewn the rational probability of *pain* arising from the propelling force of too highly rarefied air, we seemed to be warranted in drawing the following conclusions:—The sense of feeling is seated in the nervous system—the sense of feeling becoming too exquisite produces pain—the nervous system is *then* the seat of pain.—Gouty symptoms, therefore, whether fixed or wandering, being ever accompanied with that too exquisite degree of sensibility, that either produces unhappy sensations, or acute pain; we presume the nervous system to be principally affected in gouty patients.

WE endeavoured to strengthen, and support our conjectures concerning gouty, and what are termed nervous complaints, not only from practical experience; but likewise by shewing that a partial, or total loss of motion and feeling, in paralytic complaints and nervous apoplexies, probably arises from an opposite cause—namely, from the propelling force of Vital Air existing in the nervous matter, or in the medullary substance of the brain, being too much abated; or from its becoming a body at rest.

THESE are some of the practical inferences, arising from our conjectures, concerning the brain and nervous system: happy shall I think myself if they prove any way instrumental towards alleviating the distresses of mankind.

WITH regard to the sentient principle, or spirit of man, we observed, that although simple ideas might be stirred up
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in the mind by the mediation of the nervous system; yet, *our ideas are not matter*: something more than a material system, therefore, seems necessary and requisite to thinking. And if VITAL AIR be the first material cause of motion, the vascular system can be considered only as the secondary cause:—Is it not highly improbable, then, that the sentient principle should depend on this secondary cause, *namely*, on a system of organized matter?—Be this as it may, it is out of my province to enter into metaphysical controversies; and, as observed in my Lectures, I am unequal to the task: However, that the sentient principle is not material, we verily believe, and endeavoured to confirm by many other arguments;—and if the mind be not material, experimental researches after this *immaterial principle* must ever prove in vain.

WE ventured to add, that if there be a connection between gross material, and immaterial substances, it is probably effected by some *rare medium*; and therefore, that this union was not unlikely to be formed by means of VITAL AIR. Whether our general arguments on this point were forcible or not, must be left to the determination of others; we however concluded this subject in the following manner.

WE have endeavoured to shew that life depends on VITAL AIR; and that not only motion, but all the external senses depend on it likewise—and if so, it seems a fair conclusion, that the nervous fluid, or animal spirits, is nothing more than VITAL AIR.

I AM compelled, from my practical experience in the gout, in paralytic complaints, and other errors in the nervous system, to believe this—and from what has been advanced, am I not authorised to conclude, the Mosaic accounts of the creation of man, and of the laws of generation, are philosophically true?

HAVING thus set forth what may probably be deemed sufficient to enable medical and other scientific men to judge of the rationality of our system—I leave it to their consideration, whether we mean to captivate the credulous, or to appeal to men of sense in pursuit of truth.

SUCH gentlemen as have honoured me by their attention, will be enabled, from these outlines, to recall many of our conjectures concerning animal life, and the laws of the animal œconomy; which, I flatter myself, will afford them some degree of satisfaction.

I DO not expect this system, even if it should prove to be true, to be established without opposition; I am prepared to receive all objections that may be advanced, whether it be in my power to answer them or not—I am prepared to receive them, let me repeat, because I wish the principles to pass through the strictest scrutiny.

IF the principles be admitted, it is presumed the rationality of the conjectures, on animal life, will add no little degree of weight to the doctrines contended for in the course of our Lectures; *namely*, that nutrition is carried on by means of
the

the glandular system ; and that the internal, incipient causes of diseases are *universally* seated in the glands.

It is proper, *however*, to observe, whether the principles be admitted, and our conjectures allowed, or not ; it does not follow, that our practical inferences, respecting diseases, originally drawn from matters of fact evident to the senses, are to be considered as altogether erroneous.—All that I ask, is, to be judged with candour ; and most cheerfully submit to the determination of intelligent men.

I AM fully persuaded, those gentlemen who did me the honour of attending my Lectures, will not hesitate to say, that my opinions were delivered with diffidence ; it was my earnest desire to persuade ; but well knowing the scanty limits of human understanding, I believe no man can challenge me with having advanced any one conjecture as a positive assertion : Yet, *this* I did say, at the conclusion of my Lectures—

“ As a duty incumbent on me, I have, in this public
 “ manner, communicated my thoughts to liberal and learned
 “ men ; that the world at large, however they may differ
 “ in opinion, might not charge me with having reserved my
 “ *principles* as SECRETS : But having entered into so very
 “ wide a field, I am certain, you, gentlemen, would not
 “ wish me too hastily to commit to the press, the present
 “ crude and imperfect ideas, on subjects of such import-
 “ ance.—If the principles on which our opinions are founded,
 “ can be fairly overturned, by arguments drawn from expe-
 “ riments—

“ riments—*let them fall.*—If not, I trust more able advo-
 “ cates than myself will not be wanting, to support the
 “ truth of our doctrines ; and to enlarge the bounds of our
 “ knowledge, with regard to the theory, and cure of
 “ diseases.”

F I N I S.

Erratum: p. 35, l. 13, read senses.

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